

While the present invention has been particularly shown and described with reference to preferred embodiments, it will be readily appreciated that various modifications may be made without departing from the spirit and scope of the invention. For example, it may be preferable to omit the copyright information signal S_1 and simply control the number of successive generations of copies that can be made from the video signal as a function of the copy generation signal S_2 .

It is intended that the appended claims be interpreted so as to cover the embodiments which have been discussed above, all variations and modifications which have been described or suggested, and all equivalents thereto.

What is claimed is:

1. A method of processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from the processed video signal; and setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.

2. The method of claim 1 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

3. The method of claim 2 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

4. The method of claim 2 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

5. The method of claim 1 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

6. The method of claim 1 wherein said copy generation signal is a plural bit signal.

7. A video signal record medium having recorded thereon a video signal comprised of an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information and copy generation information, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information; copyright

information data indicative of whether the viewable picture is subject to copyright; and copy generation information indicative of the number of successive generations of copies that can be made from the recorded video signal, said copyright information and copy generation information being said predetermined bits in said non-picture portion. 5

8. The record medium of claim 7 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in respectively different line intervals. 10

9. The record medium of claim 8 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

10. The record medium of claim 8 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval. 15

11. The record medium of claim 7 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval. 20

12. The record medium of claim 7 wherein said copy generation signal is a plural bit signal.

13. A method of recording a video signal that may be selectively copied, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from the video signal; setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce a processed video signal; and recording said processed video signal on a record medium. 25 30 35 40 45

14. The method of claim 13 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals. 50

15. The method of claim 14 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

16. The method of claim 14 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval. 55

17. The method of claim 13 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval. 60

18. The method of claim 13 wherein said copy generation signal is a plural bit signal.

19. A method of selectively recording a video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking 65

identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that
5 when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information indicative of whether the viewable picture is subject to copyright and copy generation information indicative of
10 the number of successive generations of copies that can be made from the video signal, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information, said method comprising the steps of detecting said copyright
15 information and said copy generation information; modifying the predetermined bits to indicate a decremented number of successive generations of copies that can be made from the video signal if said copyright information indicates that the viewable picture is subject to copyright; recording the
20 video signal having said copyright information and said modified copy generation information in said VBID data; and selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations
25 of copies may be made from the video signal.

20. The method of claim 19 wherein said step of modifying the predetermined bits comprises generating new copy generation information indicative of one less than the number of successive generations of copies which are indicated
30 by the detected copy generation information, and superposing said new copy generation information in said VBID data of the video signal.

21. The method of claim 20 further comprising the steps
35 of regenerating the detected copyright information, and superposing said regenerated copyright information in said VBID data of the video signal.

22. The method of claim 19 wherein said video signal contains line intervals and said copyright information and
40 said copy generation information are superposed in VBID data in respectively different line intervals.

23. The method of claim 22 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

45 24. The method of claim 22 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

25. The method of claim 19 wherein said video signal contains line intervals and said copyright information and
50 said copy generation information are superposed in VBID data in the same line interval.

26. The method of claim 19 wherein said copy generation signal is a plural bit signal.

55 27. A method of reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether successive generations of
60 copies can be made from said video signal, said method comprising the steps of playing back said video signal from a record medium; detecting said copy protection information in the played back video signal; generating copyright information data indicative of whether said video picture is
65 subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from said played back video signal; setting both

said copyright information data and said copy generation data as predetermined bits of plural-bit data flags which are associated with and classified by a plural-bit mode number, said plural-bit data flags and plural-bit mode number being included in vertical blanking identifying (VBID) data, and said predetermined bits being used to represent other information as a function of the classification of said plural-bit data flags by said plural-bit mode number; and disposing said VBID data in the non-picture portion of said played back video signal.

28. The method of claim 27 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

29. The method of claim 28 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

30. The method of claim 28 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

31. The method of claim 27 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

32. The method of claim 27 wherein said copy generation signal is a plural bit signal.

33. The method of claim 27 wherein said copy protection information comprises recorded copyright information data and recorded copy generation data, both included in VBID data in the non-picture portion of the video signal on said record medium, and both being detected to cause the detected copyright information data and copy generation data to be set as said predetermined bits in the VBID data of said played back video signal.

34. Apparatus for processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said apparatus comprising means for generating copyright information data indicative of whether the viewable picture is subject to copyright; means for generating copy generation data indicative of the number of successive generations of copies that can be made from the processed video signal; and means for setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.

35. The apparatus of claim 34 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

36. The apparatus of claim 35 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

37. The apparatus of claim 35 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

information indicates that the viewable picture is subject to copyright; means for recording the video signal having said copyright information and said modified copy generation information in said VBID data; and means for selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations of copies may be made from the video signal. 5

47. The apparatus of claim 46 wherein said means for modifying the predetermined bits comprises means for generating new copy generation information indicative of one less than the number of successive generations of copies which are indicated by the detected copy generation information, and means for superposing said new copy generation information in said VBID data of the video signal. 10 15

48. The apparatus of claim 47 wherein said means for recording includes means for regenerating the detected copyright information, and means for superposing said regenerated copyright information in said VBID data of the video signal prior to the recording of said video signal. 20

49. The apparatus of claim 46 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in respectively different line intervals. 25

50. The apparatus of claim 49 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

51. The apparatus of claim 49 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval. 30

52. The apparatus of claim 46 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval. 35

53. The apparatus of claim 46 wherein said copy generation signal is a plural bit signal.

54. Apparatus for reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether successive generations of copies can be made from said video signal, said apparatus comprising means for playing back said video signal from a record medium; means for detecting said copy protection 40 45

61. A method of processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of whether or not at least one successive generation of copies can be made from the processed video signal when the copyright information data indicates the viewable picture is subject to copyright; and setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.

62. The method of claim 61, wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

63. A video signal record medium having recorded thereon a video signal comprised of an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit

data or data flags as data or flags such that when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information and copy generation information, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information; copyright information data indicative of whether the viewable picture is subject to copyright; and copy generation information indicative of whether or not at least one successive generation of copies can be made from the recorded video signal when the copyright information data indicates the viewable picture is subject to copyright, said copyright information and copy generation information being said predetermined bits in said non-picture portion.

64. The record medium of claim 63 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

65. A method of recording a video signal that may be selectively copied, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of whether or not at least one successive generation of copies can be made from

the video signal when the copyright information data indicates the viewable picture is subject to copyright; setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce a processed video signal; and recording said processed video signal on a record medium.

66. The method of claim 65 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

67. A method of selectively recording a video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information indicative of whether the viewable picture is subject to copyright and copy generation information indicative of whether or not at least one successive generation of copies can be made from the video signal when the copyright information data indicates the viewable picture is subject to copyright, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information, said method comprising the steps of detecting said copyright information and said copy generation information; modifying the predetermined bits to indicate a decremented number of successive generations of copies that can be made from the video signal if said copyright information

indicates that the viewable picture is subject to copyright; recording the video signal having said copyright information and said modified copy generation information in said VBID data; and selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations of copies may be made from the video signal.

68. The method of claim 67 wherein said step of modifying the predetermined bits comprises generating new copy generation information indicative of one less than the number of successive generations of copies which are indicated by the detected copy generation information, and superposing said new copy generation information in said VBID data of the video signal.

69. The method of claim 68 further comprising the steps of regenerating the detected copyright information, and superposing said regenerated copyright information in said VBID data of the video signal.

70. The method of claim 67 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

71. A method of reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether at least one successive generation of copies can be made from said video signal when the copy protection information indicates the viewable picture is subject to copyright, said method comprising the steps of playing back said video signal from a record medium; detecting said copy protection information in the played back video signal; generating copyright information data indicative of

whether said video picture is subject to copyright; generating copy generation data indicative of whether or not least one successive generation of copies can be made from said played back video signal when the copyright information data indicates the viewable picture is subject to copyright; setting both said copyright information data and said copy generation data as predetermined bits of plural-bit data flags which are associated with and classified by a plural-bit mode number, said plural-bit data flags and plural-bit mode number being included in vertical blanking interval (VBID) data, and said predetermined bits being used to represent other information as a function of the classification of said plural-bit data flags by said plural-bit mode number; and disposing said VBID data in the non-picture portion of said played back video signal.

72. The method of claim 71 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

73. The method of claim 71 wherein said copy protection information comprises recorded copyright information data and recorded copy generation data, both included in VBID data in the non-picture portion of the video signal on said record medium, and both being detected to cause the detected copyright information data and copy generation data to be set as said predetermined bits in the VBID data of said played back video signal.

74. Apparatus for processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated

plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said apparatus comprising means for generating copyright information data indicative of whether the viewable picture is subject to copyright; means for generating copy generation data indicative of whether or not at least one successive generation of copies can be made from the processed video signal when the copyright information data indicates the viewable picture is subject to copyright; and means for setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.

75. The apparatus of claim 74 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

76. Apparatus for recording a video signal that may be selectively copied, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said apparatus comprising means for generating copyright information data indicative of whether the viewable picture is subject to copyright; means for generating copy generation data indicative of whether or not at least one successive generation of copies can be

made from the video signal when the copyright information data indicates the viewable picture is subject to copyright; means for setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce a processed video signal; and means for recording said processed video signal on a record medium.

77. The apparatus of claim 76 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

78. Apparatus for selectively recording a video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking interval (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information indicative of whether the viewable picture is subject to copyright and copy generation information indicative of whether or not at least one successive generation of copies can be made from the video signal when the copyright information data indicates the viewable picture is subject to copyright, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information, said apparatus comprising means for detecting said copyright information and said copy generation information; means for modifying the predetermined bits to indicate a decremented number of successive generations of copies that can be made from the video signal if said copyright

information indicates that the viewable picture is subject to copyright; means for recording the video signal having said copyright information and said modified copy generation information in said VBID data; and means for selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations of copies may be made from the video signal.

79. The apparatus of claim 78 wherein said means for modifying the predetermined bits comprises means for generating new copy generation information indicative of one less than the number of successive generations of copies which are indicated by the detected copy generation information, and means for superposing said new copy generation information in said VBID data of the video signal.

80. The apparatus of claim 79 wherein said means for recording includes means for regenerating the detected copyright information, and means for superposing said regenerated copyright information in said VBID data of the video signal prior to the recording of said video signal.

81. The apparatus of claim 78 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

82. Apparatus for reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether at least one successive generation of copies can be made from said video signal, said apparatus comprising means for playing back said video signal from a record medium; means for detecting said copy

protection information in the played back video signal; means for generating copyright information data indicative of whether said video picture is subject to copyright; means for generating copy generation data indicative of whether or not at least one successive generation of copies can be made from said played back video signal when the copyright information data indicates the viewable picture is subject to copyright; means for setting both said copyright information data and said copy generation data as predetermined bits of plural-bit data flags which are associated with and classified by a plural-bit mode number, said plural-bit data flags and plural-bit mode number being included in vertical blanking interval (VBID) data, and said predetermined bits being used to represent other information as a function of the classification of said plural-bit data flags by said plural-bit mode number; and means for disposing said VBID data in the non-picture portion of said played back video signal.

83. The apparatus of claim 82 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

84. The apparatus of claim 82 wherein said copy protection information comprises recorded copyright information data and recorded copy generation data, both included in VBID data in the non-picture portion of the video signal on said record medium, and said means for detecting is operable to detect both said copyright information data and copy generation data in the played back video signal; and said means for setting is operable to set as said predetermined bits the detected copyright information data and copy generation data in the VBID data of said played back video signal.

85. A method of processing a video signal to selectively permit copying thereof, said video signal having vertical blanking interval data (VBID) disposed in a predetermined line

in a non-effective picture portion that includes two bits to indicate whether the video signal

permits copying or not, said method comprising the steps of

generating one of the two bits indicative of whether the viewable picture in an

effective picture portion is subject to copyright, and

generating the other of the two bits indicative of whether or not at least one

successive generation of copies can be made from the processed video signal when the one of the

two bits indicates the viewable picture is subject to copyright.

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